

REMARKS

The Present Invention and Pending Claims

Claims 3-8 are pending and directed to a pressure-sensitive adhesive sheet.

Amendments to the Claims

Claims 3 and 5 have been amended to point out more particularly and claim more distinctly the present invention. Specifically, claims 3 and 5 have been amended to incorporate the features of claims 1 and 2, respectively. Claims 1 and 2 have been canceled to prevent redundancy. Claim 3 also has been amended to delete “to be” as suggested by the Office, and to recite “wherein the linear ethylene resin is 50-100% of the resin material,” which is supported by the specification at page 5, lines 29-32. New claims 7 and 8 have been added, as supported by the specification at page 10, lines 1-5. Accordingly, no new matter has been added by way of these amendments.

Summary of the Office Action

The Office objects to claims 3-6. Claims 1, 3, and 5 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Claims 1-2 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by each of Polymer Processing Technology, *Japan Polyolefins Co. Catalog*, 2000 (reprinted from <http://www.jpa.co.jp>) (“the Polymer Processing Technology reference”) and U.S. Patent 5,741,861 (Yamamoto et al.). The Office rejects claims 3-6 under 35 U.S.C. § 103(a) as allegedly obvious in view of the Polymer Processing Technology reference and U.S. Patent 6,218,006 (Tokunaga et al.). Claims 1-3 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent 5,948,517 (Adamko et al.) in view of Ko et al. (*Journal of Polymer Science: Part A: Polymer Chemistry*, 36, 291-300 (1998)). Claims 4-6 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent 5,948,517 (Adamko et al.), Ko et al. (*Journal of Polymer Science: Part A: Polymer Chemistry*, 36, 291-300 (1998)), and U.S. Patent 6,218,006 (Tokunaga et al.). Reconsideration of these rejections is hereby requested.

Discussion of the Rejections under Section 112, Second Paragraph

The Office contends that the recitation of “to be” in the pending claims is indefinite. As suggested by the Office, claims 3 and 5 have been amended to remove the phrase.

Additionally, the Office contends that the recitation of “main component” in the pending claims is unclear. Accordingly, Applicants have amended claim 3 (upon which claim 5 is dependent) to replace “main component” with “50-100%.”

The Office rejects claim 1 because the product claim allegedly recites a method of measuring an amount of an eluted component, and such a method is not given patentable weight. Claim 1 has been canceled and the features of claim 1 have been incorporated into claim 3. The recitation that the resin material shows an amount of an eluted component of 3 wt% - 30 wt% of the entire resin material at not more than 30°C is a physical characteristic of the resin material. The claim merely provides additional information about the method of obtaining that physical value by Temperature Rising Elution Fractionation (TREF).

For the above reasons, the Section 112, second paragraph, rejections are believed to be moot, and should be withdrawn.

Discussion of the Rejections under Section 102(b)

The Office contends that claims 1 and 2 are anticipated the Polymer Processing Technology reference and the '517 reference. Claims 1 and 2 have been canceled, and the features of the claims have been incorporated into claims 3 and 5, respectively. Accordingly, the anticipation rejections of claims 1 and 2 are believed to be moot and should be withdrawn.

Discussion of the Rejections under Section 103(a)

The Office has rejected the pending claims for allegedly defining obvious subject matter in view of several references. These rejections are traversed for the following reasons.

A. The Polymer Processing Technology reference and US 6,218,006 (applied to claims 3-6)

The Office contends the Polymer Processing Technology reference teaches the use of the resin of the invention for release paper, but does not teach the use of a polyester adhesive comprising aliphatic polycarbonate diol contacting the release paper. The Office contends, however, that the '006 reference teaches the use of an adhesive layer on a silicone-free polyethylene release paper, such that it would have been obvious to one of skill in the art to combine the teachings of the Polymer Processing Technology reference and the '006 reference to arrive at the present invention.

Specifically, the Office contends that the resin (specifically J-REX LL) described in the Polymer Processing Technology reference inherently possesses the characteristics of the resin material recited in the pending claims; however, the J-REX LL resin has a different type number (AC41SA) than that described in the present application (see, e.g., Example 1) as useful in the context of the present invention. One of ordinary skill in the art recognizes that resins of different types have markedly different physical properties. Therefore, the Polymer

Processing Technology reference cannot be considered to anticipate the resin material of the pending claims.

Furthermore, the Polymer Processing Technology reference describes the use of a polymer for release paper, but a release paper made of polyethylene is generally brought into contact with an adhesive layer via a release layer of silicone and the like (as described in, e.g., Adherence Handbook, 2nd edition, edited by the Japan Adhesive Tape Industry Association Adherence Handbook Editorial Board (1995) (an English translation of Table 1 of page 173 provided herewith)). Therefore, the Polymer Processing Technology reference does not teach or suggest the direct formation of an adhesive layer on a polyethylene sheet as in the present invention.

While the '006 reference describes a silicone-free polyethylene sheet (see, e.g., column 12, lines 25-36), the '006 reference does not provide any guidance as to which polyethylene is to be used. Therefore, the '006 reference does not teach or suggest the use of a polyethylene with an amount of an eluted component of 3 wt% - 30 wt% of the entire resin material at not more than 30°C, as measured by TREF.

Therefore, because the cited references, alone or in combination, do not teach or suggest a pressure-sensitive adhesive sheet comprising a release sheet with the claimed properties, the pending claims cannot be considered to define obvious subject matter in view of the Polymer Processing Technology reference and the '006 reference.

B. US 5,741,861 and US 6,218,006 (applied to claims 3-6)

The '861 reference describes a laminate sheet comprising polyethylene (see, e.g., column 2, lines 32-60); however, the '861 reference does not teach or suggest the use of this sheet as a release sheet, or the formation of an adhesive layer directly onto a release sheet, as recited in the pending claims. Furthermore, the '861 reference does not teach or suggest the relationship between the amount of eluted component of the resin as measured by TREF and the release property of a sheet material from a pressure-sensitive adhesive layer.

As described above, the '006 reference does not teach or suggest the use of a polyethylene with an amount of an eluted component of 3 wt% - 30 wt% of the entire resin material at not more than 30°C, as measured by TREF.

Therefore, even if one of ordinary skill in the art were motivated to combine the '861 and '006 references, it would not be apparent to use a polyethylene with an amount of an eluted component of 3 wt% - 30 wt% of the entire resin material at not more than 30°C, as measured by TREF, as a release sheet based on the disclosures of the '861 and '006

references. Under the circumstances, the pending claims cannot be considered to define obvious subject matter in view of the '861 and '006 references.

C. US 5,948,517 and Ko et al. (applied to claims 1-3)

The Office contends that, even though the '517 reference fails to teach a material with an eluted component at not more than 30° C as measured by a TREF method, it would have been obvious to one skilled in the art to modify the material of the '517 reference to arrive at a material with the specific eluted component, because it was known at the time of the invention that a TREF method merely analyzes the chemical composition distribution of a material (as described in Ko et al.). Applicants respectfully disagree with the Office's statement that the TREF method merely analyzes the chemical composition distribution. The amount of an eluted compound to be measured by the TREF method is affected not only by the chemical composition distribution, but also by the molecular weight and the chemical structure (particularly crystallinity) of the polymer (see, e.g., page 5, lines 4-14, of the specification). In an effort to explain TREF in more detail, Applicants submit herewith Wild et al. (*J. Polymer Sci.*, 20, 441-455 (1982)).

Ko et al. merely describes measurement, by TREF, of a chemical composition distribution of a resin. Ko et al. does not teach that the amount of the eluted component to be measured by TREF is always determined by the chemical composition of the polymer as interpreted by the Office.

The '517 reference describes a polymer that is different from the polymer recited in the pending claims. For example, there is a difference in the density of the polymer of the '517 reference and the density of the polymer described in the Examples of the present application. Similarity in chemical composition distribution does not mean that the polymers share the same chemical structure. Therefore, the amount of the eluted component measured by TREF of the polymer described in the '517 reference is not necessarily the same as that of the polymer recited in the pending claims. Indeed, the amounts of eluted components (by TREF) would be different since the polymers have different densities.

Thus, because the cited references, alone or in combination, do not teach or suggest a pressure-sensitive adhesion sheet comprising a release sheet with the claimed properties, the pending claims cannot be considered to define obvious subject matter in view of the '517 reference and Ko et al.

In re Appln. of Inokuchi et al.
Application No. 10/007,792

D. US 5,948,517, Ko et al., and US 6,218,006 (applied to claims 4-6)

As described above, the '517 and '006 references and Ko et al. do not teach or suggest the relationship between the amount of eluted component of the resin as measured by TREF and the release property of a sheet material from a pressure-sensitive adhesive layer. Therefore, even if one of ordinary skill in the art were motivated to combine these references, it would not have been apparent to create a pressure-sensitive adhesive sheet comprising a resin material as a release sheet, wherein the resin material shows an amount of an eluted component of 3 wt% - 30 wt% of the entire resin material at not more than 30°C, as measured by TREF. Under the circumstances, the pending claims cannot be considered to define obvious subject matter in view of the aforementioned references.

For the foregoing reasons, the obviousness rejections of the pending claims are believed to be improper, and should be withdrawn.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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